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CENTRAL FAX CENTER****NOV 08 2006****Remarks**

Applicant respectfully requests reconsideration of this application as amended. The specification has been amended. Claims 10, 12, 13, 15-19, and 21 have been amended. Claim 20 has been cancelled. Claims 22-27 have been added. Claims 1-9 were previously canceled. Therefore, claims 10-19 and 21-27 are presented for examination.

Claim Objection

Claim 21 stand objected to because 21. Claim 21 has been amended to incorporate the appropriate correction. As a result, applicant respectfully requests that the Examiner withdraw the objection to claim 21.

35 U.S.C. §101 Rejection

Claims 10-21 stand rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. However, applicant submits that the present claims are directed to a "useful, tangible, and concrete" result under the judicial exception to 35 U.S.C. §101. The Office Action takes issue with the term "rarely taken" in claims 10 and 21. Specifically, the Office Action states that "the specification fails to provide a description of how such determination may be done, other than indicating a general presumption that exceptions rarely occur. Without a description of how one attempting to practice the recited methods may reasonably determine how to qualify a control-flow branch as rarely taken, the prescribed methods do not provide for assured, repeatable results, and cannot be said to be concrete." (Office Action mailed 8/10/06 at pg. 4.) Claims 10 and 21 have been amended

and no longer refer to the term “rarely taken”. As such, claims 10 and 21 now provide concrete results.

In addition, the Office Action state that “the ‘result’ of claims 10-21 appears to be a series of calculations, or at best, the insertion of instructions into an abstraction of a computer program.... The claims do not suggest...any real-world change that would occur...in a manner supporting a practical application as a tangible result that would enable any intended usefulness to be realized.” (Id.) Yet, both of claims 10 and 21 refer to removing edges from one or more exceptional paths in the routine or program. This feature provides a useful and tangible result as it is this removal of edges that is elimination partial redundancy in the routine or program.

For the above reasons, applicant submits that the present claims provide a “useful, tangible, and concrete” result under the judicial exception to 35 U.S.C. §101. As such, applicant respectfully requests the withdrawal of the 35 U.S.C. §101 rejection.

35 U.S.C. §112 Rejection

Claims 10-21 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to the Office Action’s concerns with the term “rarely taken”, this term has been removed from the claims.

With regard to the term “prologue” as recited in the claims, the Office Action states that “it is unclear whether this step requires any action or necessarily further limits the claims.” However, description and support of the prologue feature can further be found in

relation to Figures 20 and 21 and their related description in the specification of the present application. As such, applicant submits that this feature does not render the claims indefinite.

With regard to claims 17 and 18's recitation of "executing flow equations", these claims have been amended to remove this recitation.

With regard to claims 10-20 being incomplete for omitting essential steps, applicant has further amended claim 10. Applicant submits that claim 10 does recite essential steps, such as those necessary to achieve the elimination of partial redundancy.

All references in the Office Action to insufficient antecedent basis have been corrected by the application.

In light of the above, applicant respectfully requests the withdrawal of the 35 U.S.C. §112 rejection.

35 U.S.C. §102(b) Rejection

Claim 10 stands rejected under 35 U.S.C. §102(b) as being anticipated by Rastislav Bodik et al. ("Complete Removal of Redundant Expressions," In Proceedings of the ACM SIGPLAN '98 Conference on Programming Language Design and Implementation, pp. 1-14, June 1998) [hereinafter "Bodik"]. Applicant submits that the present claims are patentable over Bodik.

Bodik discloses a system for achieving complete partial redundancy elimination (PRE) while incurring an acceptable code growth. An algorithm is presented for complete removal of partial redundancies, based on the integration of code motion and control flow restructuring. Bodik resorts to restructuring to merely remove obstacles to code motion, rather than to carry out the actual optimization. (Bodik at pg. 1, Abstract.)

Claim 10, as amended, recites:

A method of eliminating partial redundancy in a routine, the method comprising:
speculatively computing down-safety by ignoring branches in a control-flow graph that are known to be infrequent;
computing up-safety using the results of the down-safety calculation to determine where operations are speculatively available;
using the down-safety and up-safety to determine instructions to be inserted into the routine that set components in a stack, the stack to handle cleanup instructions for the routine; and
removing edges from one or more exceptional paths in the routine to eliminate the partial redundancy in the routine, the edges to be removed having purposes that are performed by the instructions.

Applicant submits that Bodik does not disclose or suggest using the down-safety and up-safety to determine instructions to be inserted into the routine that set components in a stack, the stack to handle cleanup instructions for the routine, as recites by claim 10.

Applicant can find no disclosure or suggestion of such a feature anywhere in Bodik.

Therefore, claim 10, as well as its dependent claims, is patentable over Bodik

Claim 21, as amended, also recites, in part, placing operations in the program that set the state of items on the stack based on both of a down-safety calculation and an up-safety calculation for the program, the stack to represent cleanup instructions for the program. As discussed above, Bodik does not disclose or suggest such a feature. Therefore, claim 21, as well as its dependent claims, is patentable over Bodik for the reasons discussed above with respect to claim 10.

Applicant respectfully submits that the rejections have been overcome and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

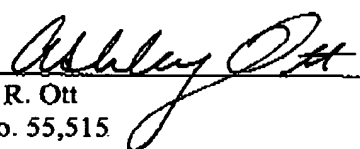
Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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